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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,496	12/20/2001	Serge Jacques Fayeulle	STL10485/40046.178USU1	2515

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EXAMINER

TZENG, FRED

ART UNIT PAPER NUMBER

2651

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,496

Applicant(s)

FAYEULLE, SERGE JACQUES

Examiner

Fred Tzeng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 10, 12, 13, 17 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 5-7, 9, 11, 14-16 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. Claims 1-21 are presented for examination.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 8, 19-21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bealle (USPN 4,279,623).

Regarding claim 1, Bealle discloses a method of contouring a surface portion of a head (see column 2 lines 52-57 or the title, i.e., the head 30) for a disk drive that includes a disc rotatably mounted on a base (see column 5 lines 15-18 and column 6 lines 44-46, i.e., the disc 37), the method comprising: positioning the head over a park zone of the disc (see column 2 lines 62-68 and column 3 lines 1-2, 21-27, i.e.,

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positioning the head 30 to the holder means); and rotating the disc for a selected time to burnish the head against the park zone of the disc while maintaining the head positioned substantially over the park zone (see column 3 lines 2-27, column 5 lines 15-26 and column 6 lines 16-25, i.e., the disc 37 is rotated by the motor rotation means 32 for a selected time such that the head surface is shaped/burnished by the shaping apparatus having a concave surface while the head 30 is parked/positioned in the holder means).

Regarding claim 2, Bealle discloses that the park zone comprises a textured surface (see column 3 lines 9-15, i.e., the grinding surface).

Regarding claim 3, Bealle discloses that the textured surface includes bumps that interact with the surface portion of the head (see column 3 lines 9-20, i.e., the concave grinding being the bumps).

Regarding claim 4, Bealle discloses that the rotating step includes rotating the disc at a fixed rotational speed for the selected time (see column 5 lines 36-38, column 6 lines 16-25, 49-52, 57-60, i.e., the disc 37 is selectively activated for rotation at the selected time at a fixed speed for data writing and reading).

Regarding claim 8, Bealle discloses that the rotating step includes plural sequences of starting and stopping the disc (see column 6 lines 16-22, i.e., selectively activating of rotations comprising of plural starting and stopping motions).

Regarding claim 19, Bealle discloses a method of contouring a surface portion of a head for a disc drive (see column 2 lines 52-57 or the title, i.e., the head 30) that includes a disc rotably mounted on a base (see column 5 lines 15-18 and column 6

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lines 44-46, i.e., the disc 37), the method comprising: positioning the head over a park zone of the disc (see column 2 lines 62-68 and column 3 lines 1-2, 21-27, i.e., positioning the head 30 to the holder means); and contouring the head surface portion to reduce contact between the head and the disc during operation of the disc drive (see column 3 lines 1-27, 36-45, i.e., the precisely contoured head surface reducing contact between the head and the disc during operation of the disc drive which are suitable for high density digital and video systems wherein precise dimensions are critical for effective performance).

Regarding claim 20, Bealle discloses that the contouring step comprises rotating the disc at a fixed rotational speed for a selected time (see column 5 lines 36-38, column 6 lines 16-25, 49-52, 57-60, i.e., the disc 37 is selectively activated for rotation at the selected time at a fixed speed for data writing and reading).

Regarding claim 21, Bealle discloses that the contouring step comprises plural sequences of starting and stopping rotation of the disc (see column 6 lines 16-22, i.e., selectively activating of rotations comprising of plural starting and stopping motions).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 10, 12, 13, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Felts et al (USPN 5,863,237), hereafter as Felts, in view of Bealle (USPN 4,279,623).

Regarding claim 10, Felts discloses the invention substantially as claimed. Felts discloses a disc drive (see figure 1 or column 2 lines 36-40, i.e., the disc drive 100) including a disc (see column 2 lines 40-41, i.e., the disc 105) rotably mounted on a spindle motor (see column 2 lines 46-47, 55-56, i.e., the spindle 110 with spindle motor 115) mounted on a base and an actuator assembly mounted adjacent the disc (see column 2 line 42, i.e., the actuator assembly 120), the actuator assembly having an actuator arm including a distal end supporting a head over a surface of the disc (see column 3 lines 4-16, i.e., the actuator arm 125 supporting the head 130 over the surface of disc 105), wherein the surface of the disc can be burnished to remove or reduce its asperities (see column 2 lines 36-40, 50-55 or column 1 lines 50-61) such that head-to-asperity contact can be minimized (see column 1 lines 40-46).

However, Felts does not specifically teach burnishing a head surface to minimize the head-to-asperity contact.

Bealle discloses a method of contouring a surface portion of a head (see column 2 lines 52-57 or the title, i.e., the head 30) for a disk drive that includes a disc rotatably mounted on a base (see column 5 lines 15-18 and column 6 lines 44-46, i.e., the disc 37), the method comprising: positioning the head over a park zone of the disc (see column 2 lines 62-68 and column 3 lines 1-2, 21-27, i.e., positioning the head 30 to the holder means); and rotating the disc for a selected time to burnish the head against the

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park zone of the disc while maintaining the head positioned substantially over the park zone (see column 3 lines 2-27, column 5 lines 15-26 and column 6 lines 16-25, i.e., the disc 37 is rotated by the motor rotation means 32 for a selected time such that the head surface is shaped/burnished by the shaping apparatus having a concave surface while the head 30 is parked/positioned in the holder means) to remove the irregularities/asperities on the recording surface of the head (see abstract lines 20-21).

Felts and Bealle are combinable because they are from the same field of endeavor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Bealle's invention of contouring/burnishing the recording surface of a magnetic head (see title of Bealle reference) into Felts' invention of burnishing a surface of a magnetic disc of a disc drive (see abstract of Felts reference) in order to minimize the head-to-asperity contact, because Bealle's invention of removing asperities on a head recording surface can remove or reduce the asperities/irregularities between the recording surface of a head and the recording surface of a disc which are suitable for high density digital and video recording systems wherein close tolerances are desired (see abstract of Bealle, lines 24-26).

Regarding claim 12, Bealle discloses that the park zone comprises a textured surface defining a plurality of bumps that interact with the surface of the head as the head is burnished (see column 3 lines 9-20, i.e., the concave grinding being the bumps).

Regarding claim 13, Bealle discloses that the disc is rotated at a fixed rotational speed for the selected time as the head is burnished (see column 5 lines 36-38, column

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6 lines 16-25, 49-52, 57-60, i.e., the disc 37 is selectively activated for rotation at the selected time at a fixed speed for data writing and reading as the head is burnished).

Regarding claim 17, Bealle discloses that the disc undergoes a plurality of starting and stopping sequences as the head is burnished (see column 6 lines 16-22, i.e., selectively activating of rotations comprising of plural starting and stopping motions).

Allowable Subject Matter

7. Claims 5-7, 9, 11, 14-16, 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Claims 5 and 14 are allowable over the prior art of record because none of the prior art of record teaches or fairly suggests a system or method for contouring/burnishing a head surface of a disc drive, comprising of rotating a disc in the disk drive at a fixed speed which is less than the operating rotational speed of the disc.

Claims 6 and 15 are allowable over the prior art of record because none of the prior art of record teaches or fairly suggests a system or method for contouring/burnishing a head surface of a disc drive, comprising of rotating a disc in the disk drive at a fixed speed which is less than the take off speed of the head.

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Claims 7 and 16 are allowable over the prior art of record because none of the prior art of record teaches or fairly suggests a system or method for contouring/burnishing a head surface of a disc drive, comprising of rotating a disc in the disk drive at a fixed speed for a period of time of from about five minutes to about thirty minutes.

Claims 9 and 18 are allowable over the prior art of record because none of the prior art of record teaches or fairly suggests a system or method for contouring/burnishing a head surface of a disc drive, comprising of rotating a disc in the disc drive including from about 100 to about 500 starting and stopping sequences.

Claim 11 is allowable over the prior art of record because none of the prior art of record teaches or fairly suggests a system or method for contouring/burnishing a head surface of a disc drive, wherein the head surface portion has a roughness of less than about 0.5 nanometers.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (formal communications, please mark

"EXPEDITED PROCEDURE")

Or:

(703) 308-6606 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021
Crystal Drive, Arlington. V.A., Sixth Floor (receptionist).

11. Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Fred Tzeng whose telephone number is 703-305-4841.
The examiner can normally be reached on weekdays from 9:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, David Hudspeth can be reached on 703-308-4825. The fax phone
numbers for the organization where this application or proceeding is assigned are 703-
872-9306 for regular communications and 703-746-5710 for After Final
communications.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is 703-305-
3900.

A handwritten signature in black ink, appearing to be 'Fred F. Tzeng', with a stylized, cursive script.

Fred F. Tzeng

May 31, 2004